Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Supporting Information

A Multicolor-Switchable Fluorescent Lanthanide MOFs Triggered by Anti-cancer Drugs: Multifunctional Platform for Anti-cancer Drug Sensing and Information Anticounterfeiting

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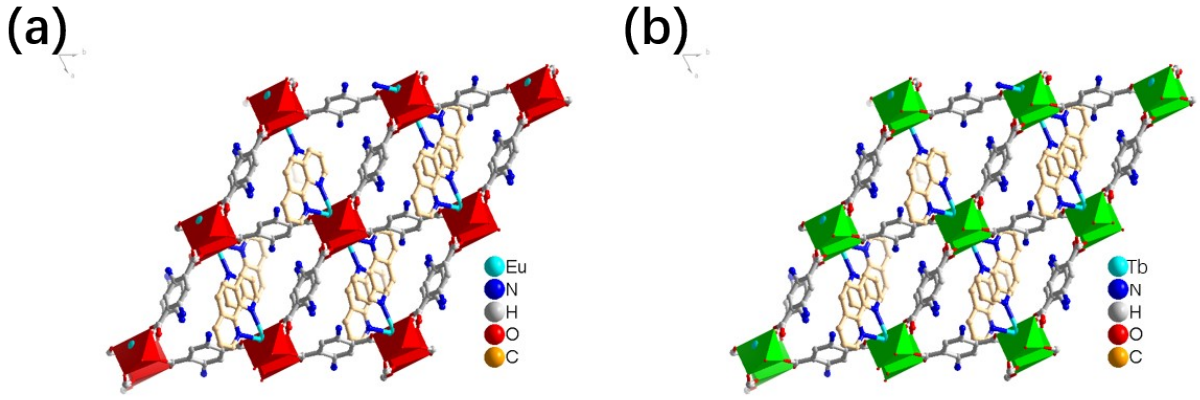

Figure S1 The detail structure of the (a) Eu-MOFs; (b) Tb-MOFs.

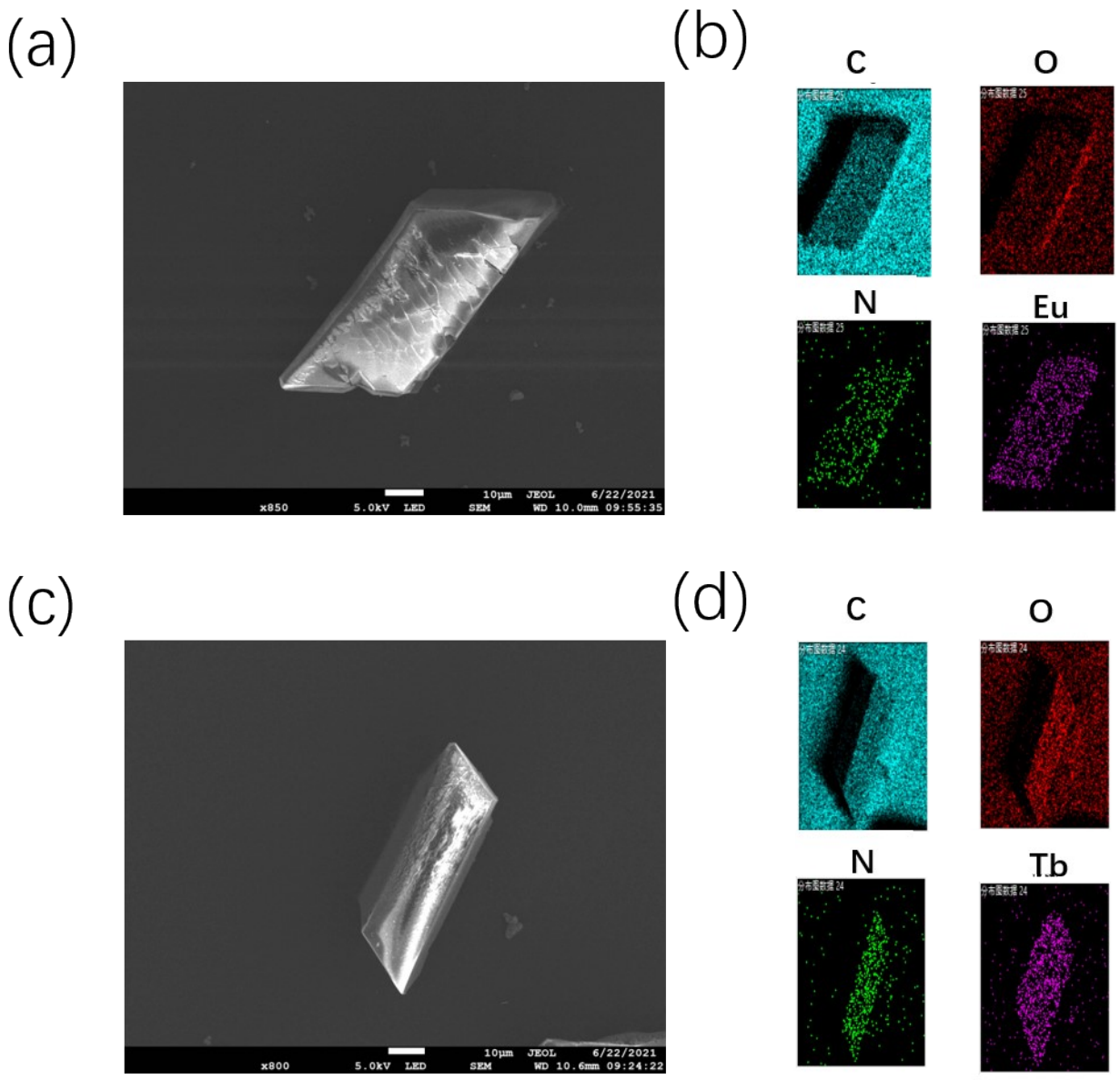

Figure S2 The SEM image and element mappings of (a) (b) Eu-MOFs; (c) (d) Tb-MOFs.

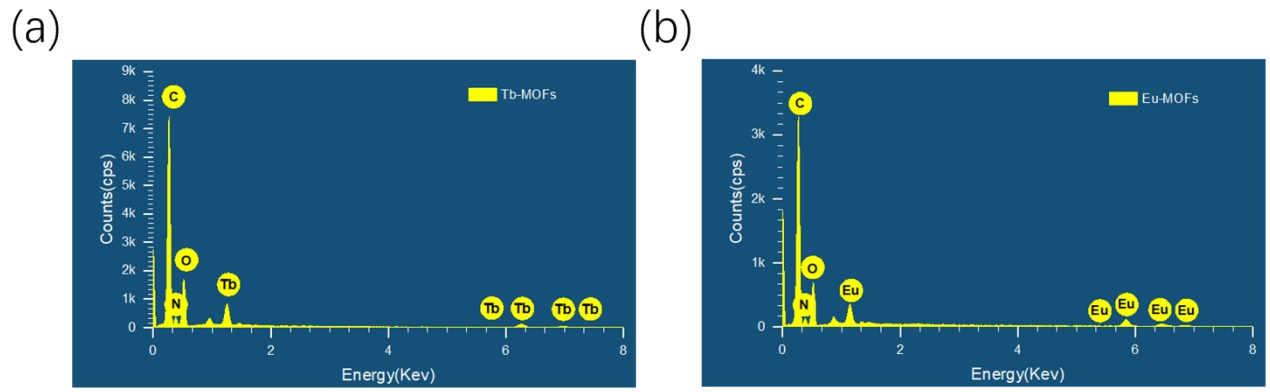

Figure S3 Energy dispersive X-ray analysis (EDX) spectroscopy of (a) Tb-MOFs and (b) Eu-MOFs.

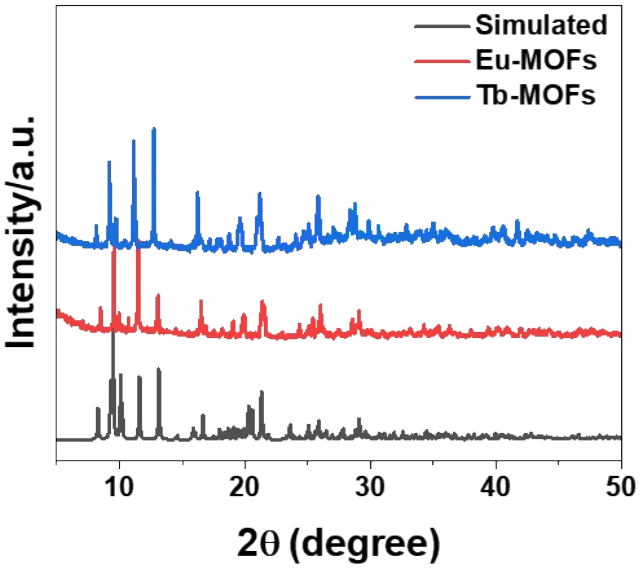

Figure S4 The PXRD patterns of Eu-MOFs, Tb-MOFs and simulated one.

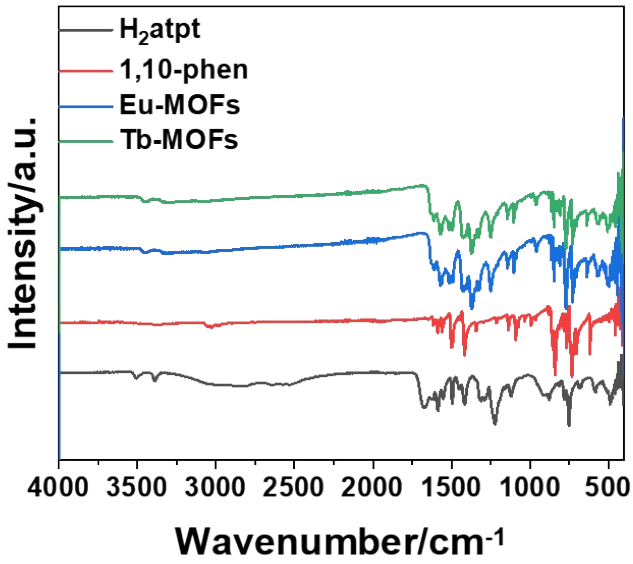

Figure S5 FT-IR spectrum of the H_2atpt, 1,10-phen, Eu-MOFs and Tb-MOFs.

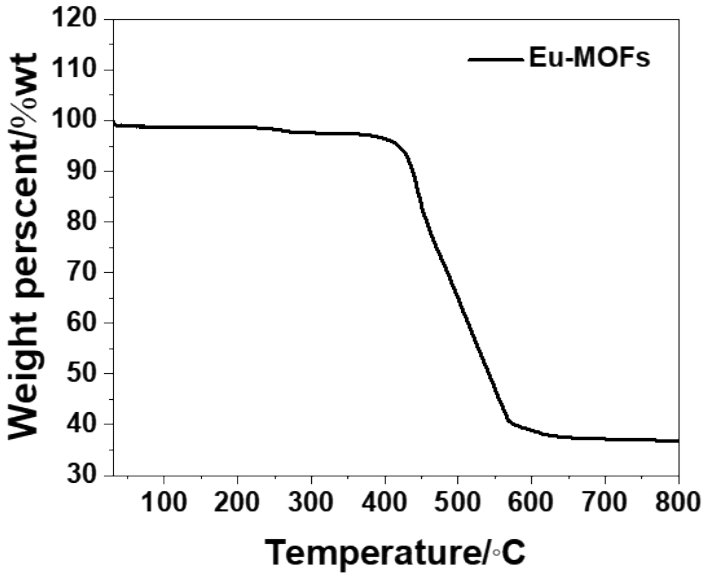

Figure S6 Thermal gravimetric analysis curves for Eu-MOFs.

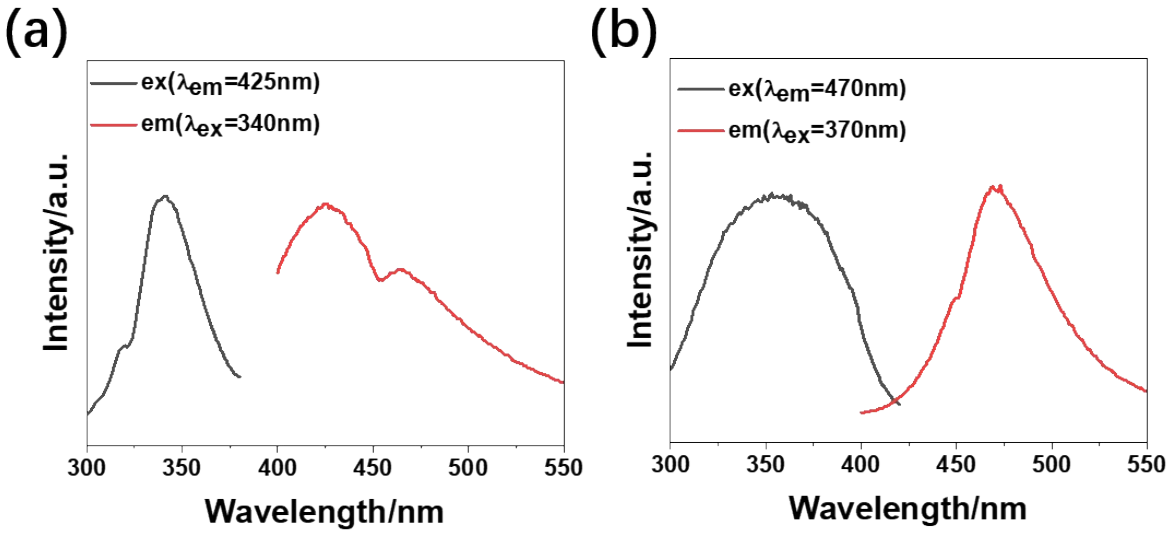

Figure S7 Excitation (black line) and emission (red line) spectra of (a) 1,10-phen and (b) H_2atpt.

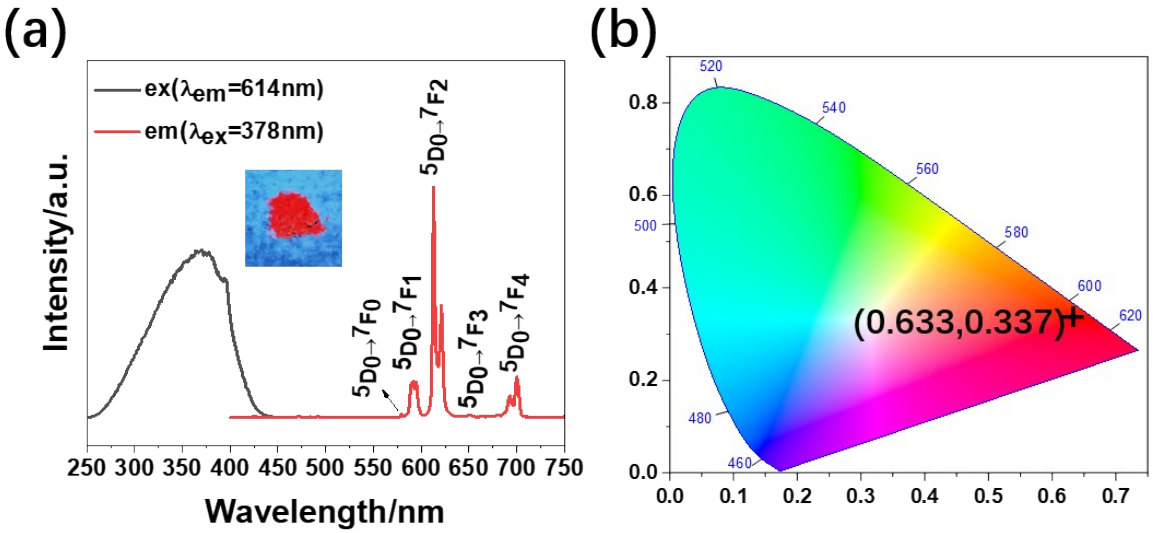

Figure S8 (a) Excitation (black line) and emission (red line) spectra of Eu-MOFs in solid state (The inset is corresponding photograph under UV light); (b) The corresponding CIE chromaticity diagram of Eu-MOFs.

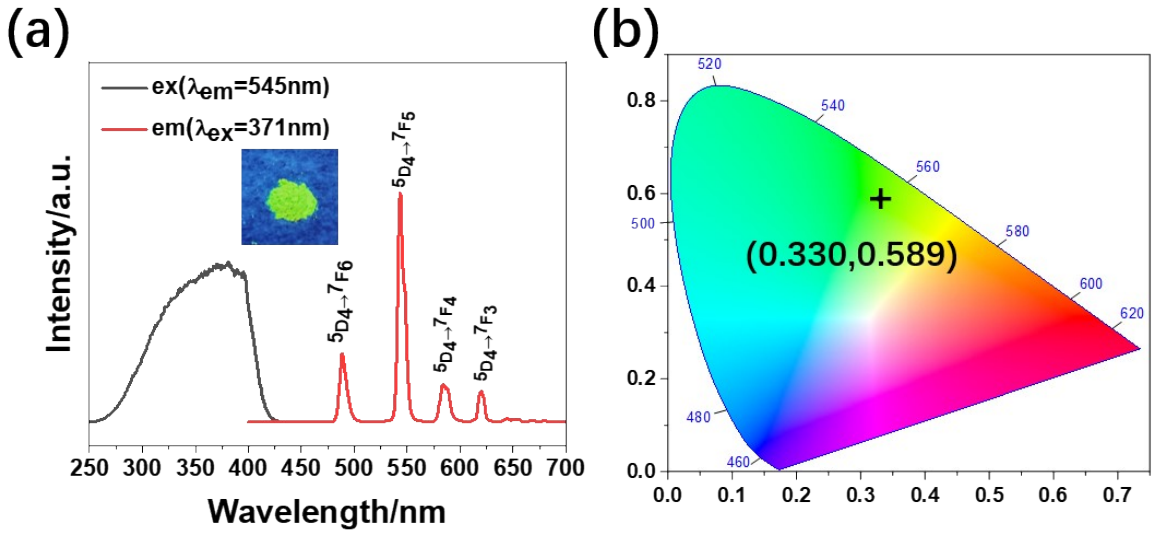

Figure S9 (a) Excitation (black line) and emission (red line) spectra of Tb-MOFs in solid state (The inset is corresponding photograph under UV light); (b) The corresponding CIE chromaticity diagram of Tb-MOFs.

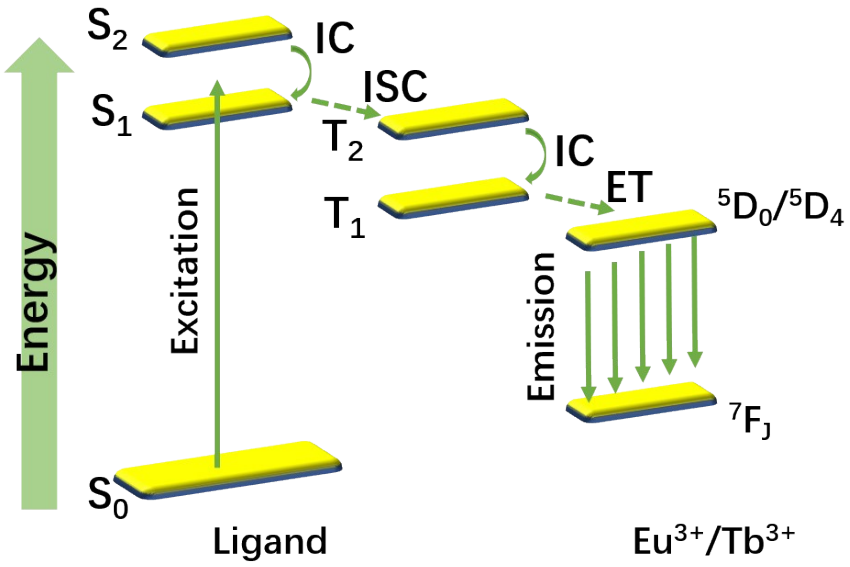

Figure S10 Energy transfer diagram for ligand and Eu^{3+}/Tb^{3+}, S_0 = ground states, S_1 and S_2 =excited singlet states, T_1 and T_2 = excited triplet states, IC=internal conversion, ISC=intersystem crossing (non-radiative processes), ET =energy transfer.

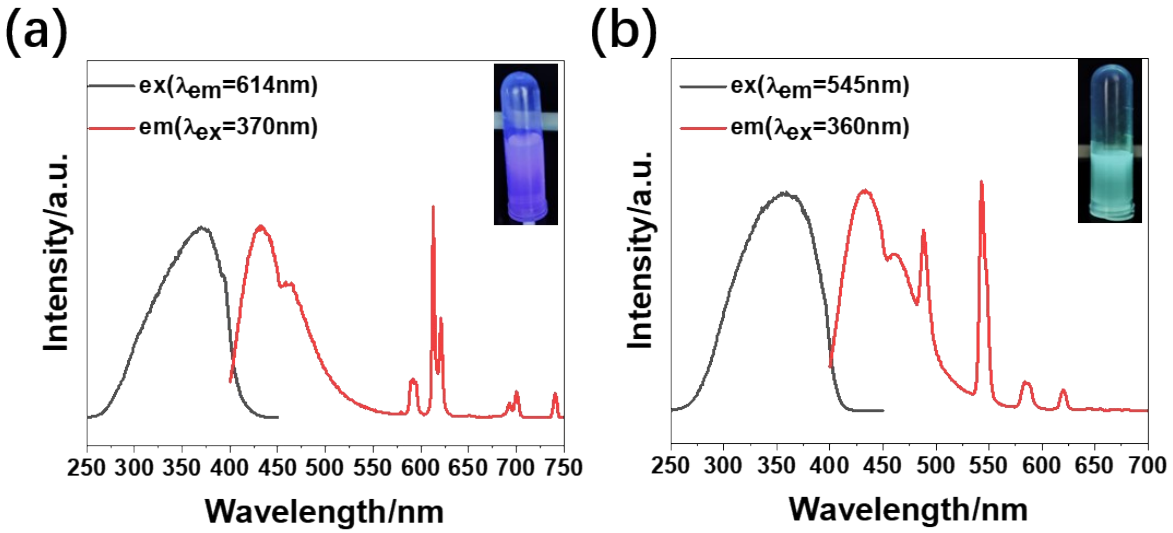

Figure S11 (a) Excitation (black line) and emission (red line) spectra of Eu-MOFs in aqueous solution (The inset is corresponding photograph under UV light); (a) Excitation (black line) and emission (red line) spectra of Tb-MOFs in H_2O (The inset is corresponding photograph under UV light)

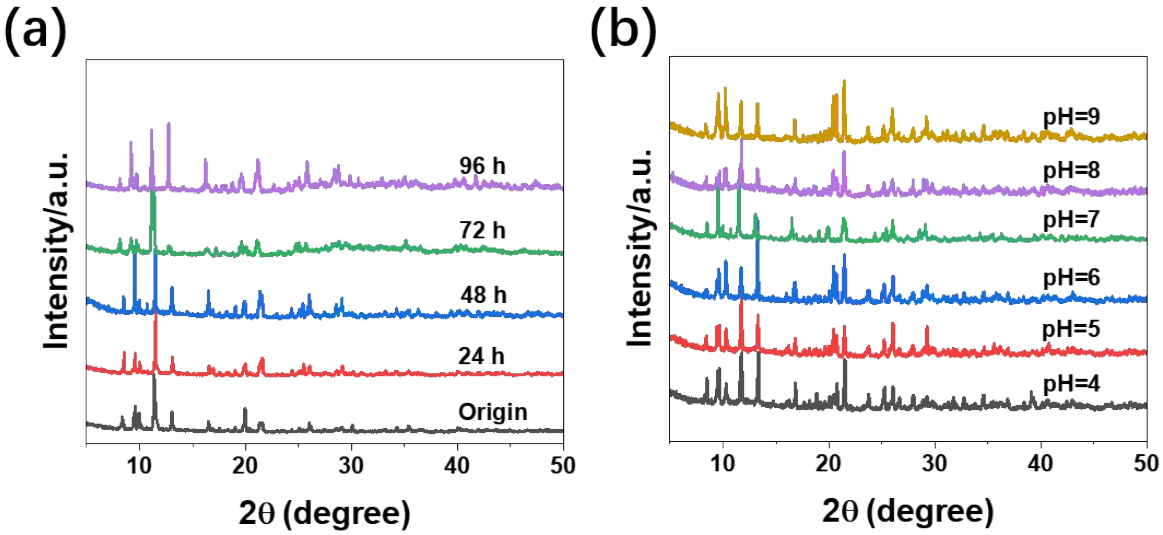

Figure S12 (a) PXRD of Eu-MOFs after being immersed into aqueous solution for 96 h; (b) PXRD of Eu-MOFs after being immersed into solutions of pH = 4-9.

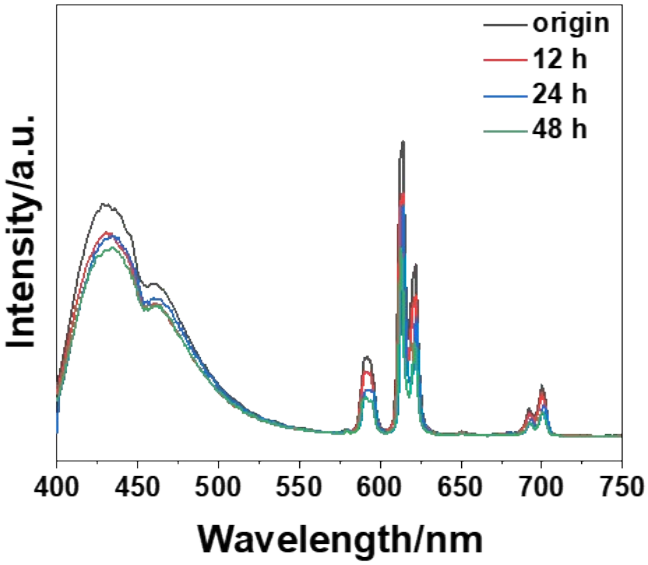

Figure S13 Emission spectra of Eu-MOFs after being immersed into aqueous solution for 0-48 h.

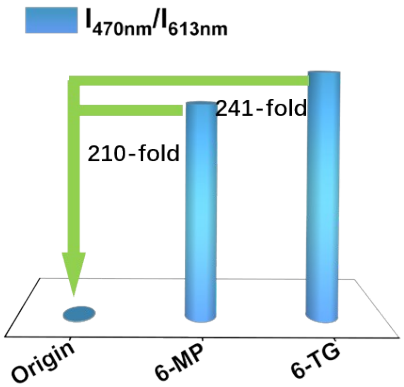

Figure S14 The corresponding histogram (I_{470nm}/I_{613nm}) of the original Cu-Eu-MOFs and Cu-Eu-MOFs after the addition of 6-MP and 6-TG.

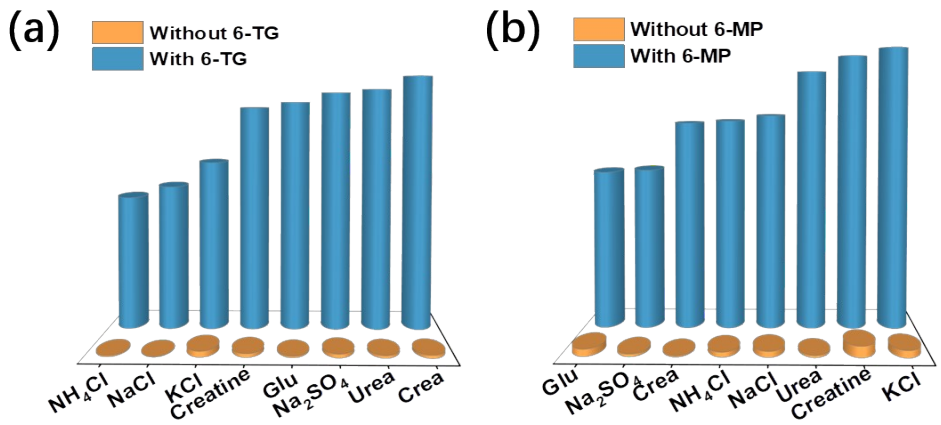

Figure S15 Luminescence responses of I_{470nm}/I_{613nm} toward other urine components with and without (a) 6-TG; (b) 6-MP.

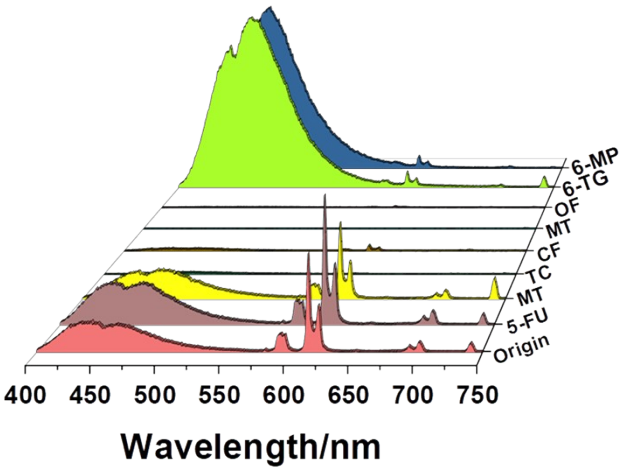

Figure S16 Luminescence spectra of Cu-Eu-MOFs towards frequently used antibiotics or anti-cancer drugs.

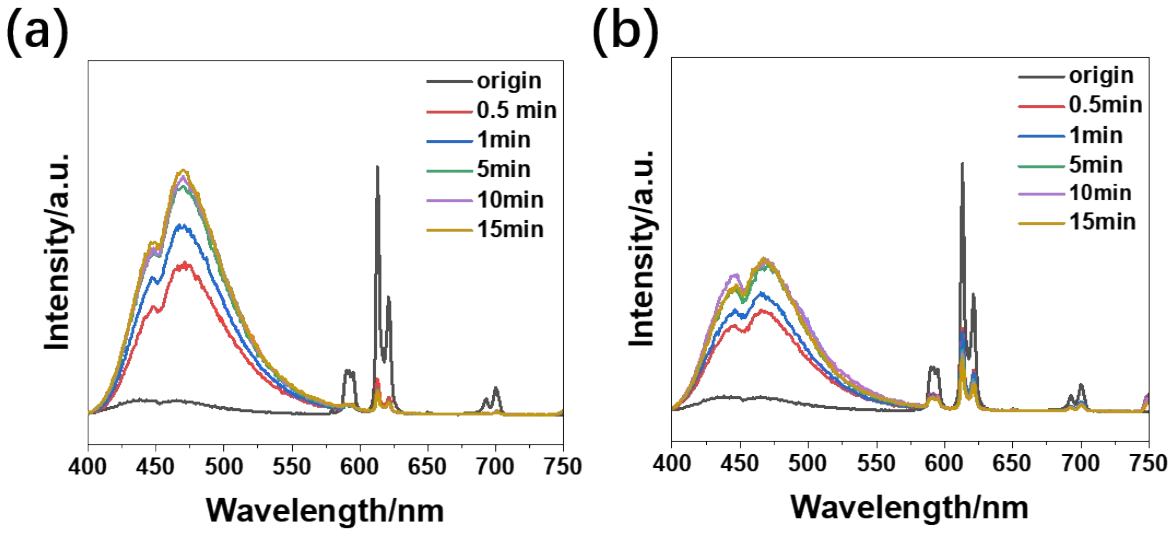

Figure S17 Variation of luminescent intensity of Eu-MOFs with different immersion time in (a) 6-MP; (b) 6-TG.

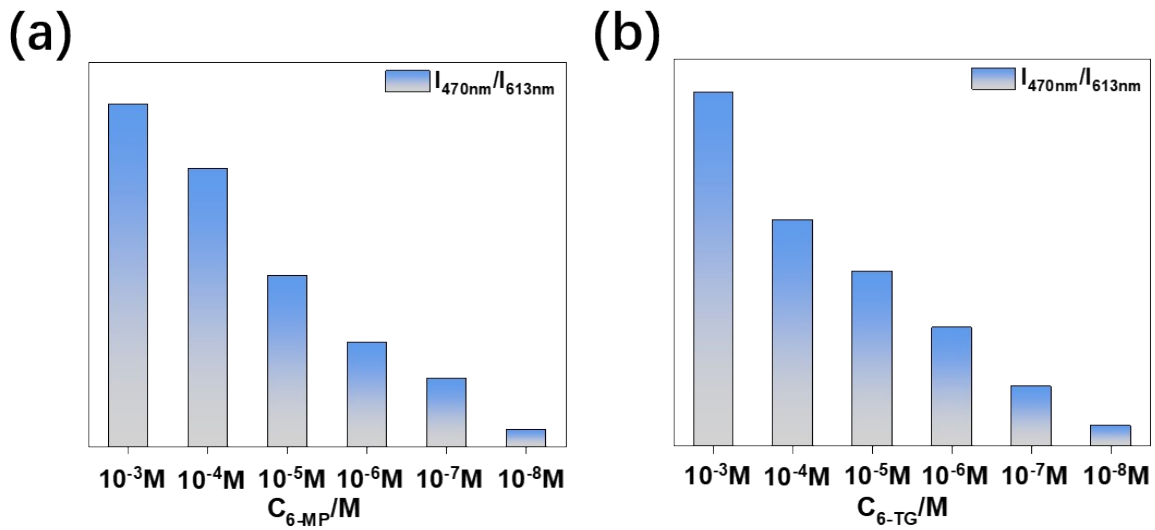

Figure S18 The column diagram of the fluorescence intensity of Eu-MOFs (I_{470nm}/I_{613nm}) after immersing into different concentrations of (a) 6-MP; (b) 6-TG in urine sample.

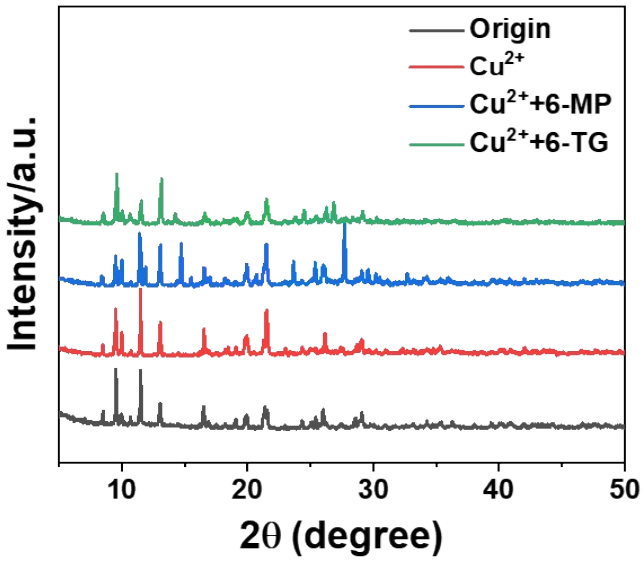

Figure S19 PXRD patterns of Eu-MOFs after being immersed into H_2O, Cu^{2+}, Cu^{2+}+6-MP and Cu^{2+}+6-TG.

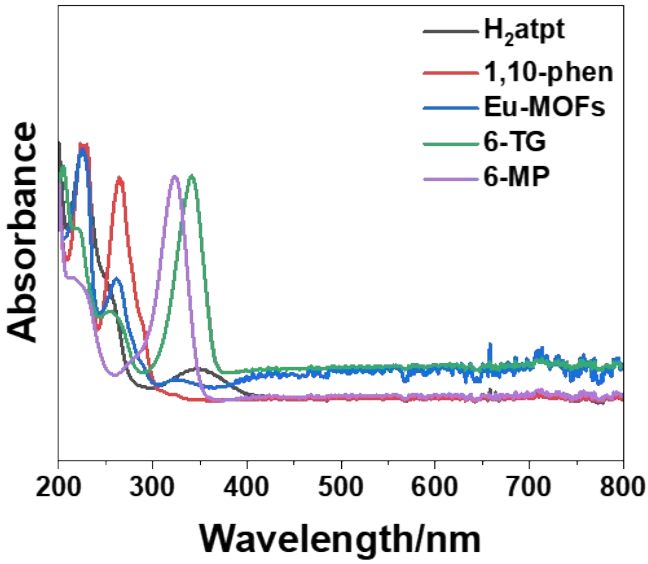

Figure S20 UV-vis spectra of H_2atpt, 1,10-phen, Eu-MOFs, 6-TG and 6-MP.

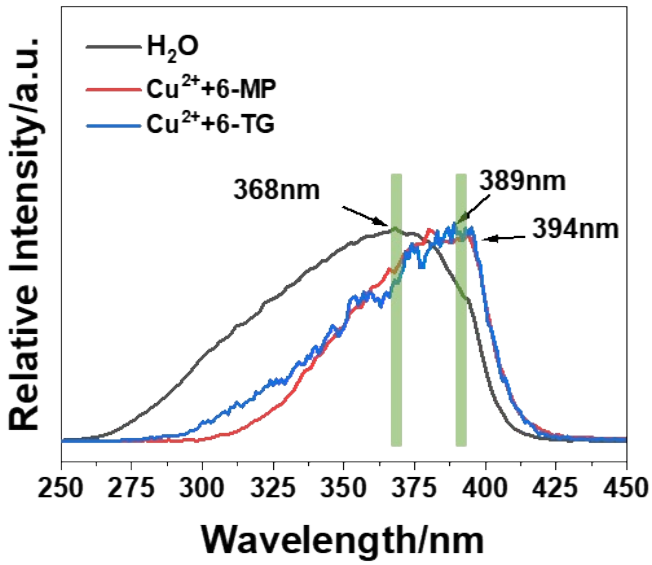

Figure S21 Excitation spectra of Eu-MOFs in aqueous solution, Cu^{2+}+6-MP and Cu^{2+}+6-TG.

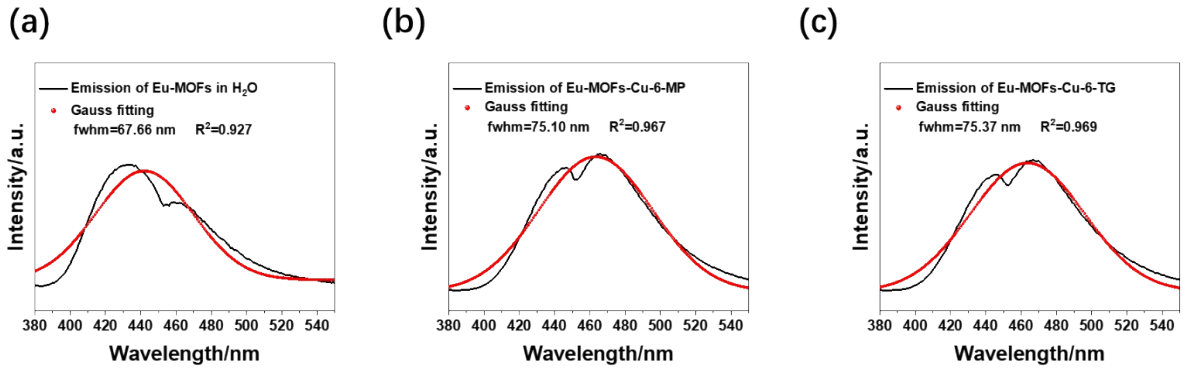

Figure S22 Emission spectrum Gauss fitting curve of Eu-MOFs in (a) H_2O; (b) Cu^{2+}+6-MP and (c) Cu^{2+}+6-TG.

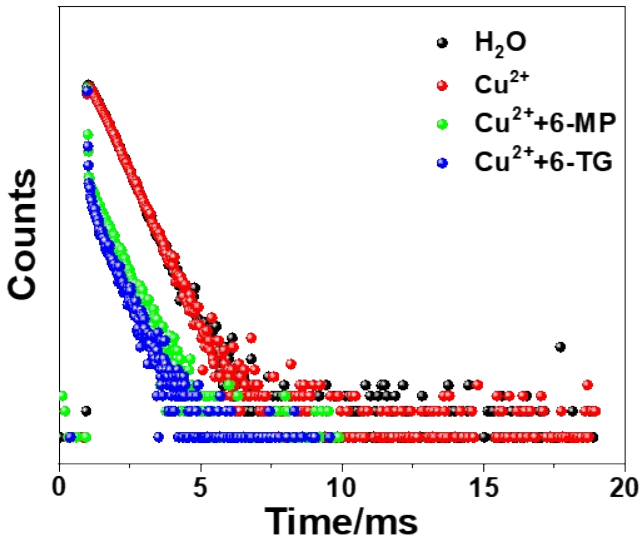

Figure S23 Luminescence decay curves of Eu-MOFs after being immersed into H_2O, Cu^{2+}, Cu^{2+}+6-MP and Cu^{2+}+6-TG.

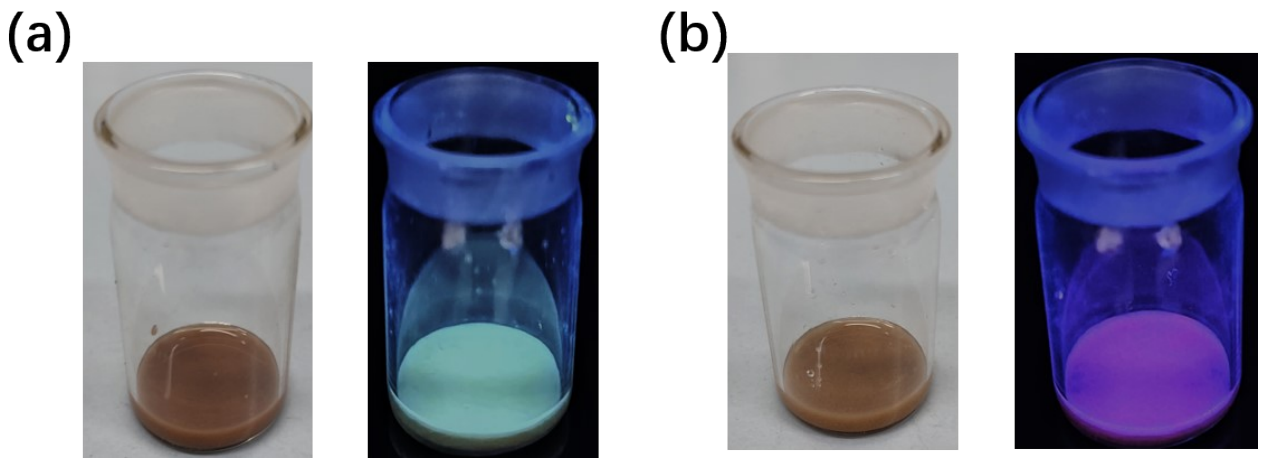

Figure S24 (a) Photograph of Tb-MOFs inks under daily light (left) and UV light (right); (b) Photograph of Eu-MOFs inks under daily light (left) and UV light (right).

Table S1 The weight percentage of elements in Eu-MOFs and Tb-MOFs determined by energy dispersive X-ray spectroscopy (EDX).

(a)

Material	Element	Weight%
Eu-MOFs	C	54.07
	N	9.92
	O	19.81
	Eu	16.20

(b)

Material	Element	Weight%
Tb-MOFs	C	53.29
	N	12.48
	O	24.09
	Tb	10.14

Table S2 The luminescence decay times of Eu-MOFs after being immersed into H_2O, Cu^{2+},Cu^{2+}+6-MP and Cu^{2+}+6-TG.

Substance	Lifetimes
H_2O	609.11μs
Cu^{2+}	613.28μs
Cu^{2+}-6-MP	541.66μs
Cu^{2+}-6-TG	527.06μs